

You will need an EarthComm book turned to pg. U-70.

IWBAT understand the characteristics of high-gradient and low-gradient streams through shared reading, class discussion, and written responses to questions. I will use vocabulary such as gradient, discharge, headwaters, meander, and river.

Water Resources Unit

Activity I p. U-70

Think About It

Calinness vs commotion
down hill movement vs flat, not much movement
skinny/narrow vs wide
{ vs — rocky vs field
Can be parts of the same body of water next to each other



Digging Deeper

A river is a stream, but a stream may not be a river
A stream is a flow of water through a natural channel

Brooks, Creeks small streams
Headwaters are beginning of a river
gradient—slope or elevation change
usually highest near the headwaters

IWBAT understand the characteristics of high-gradient and low-gradient streams through shared reading, class discussion, and written responses to questions.

Water Resources Unit

Digging Deeper

HG streams can move boulders, despite being shallow because they have high velocities
Downcutting - erosion of a valley by a stream
Can form canyons
Loose material is carried downstream and deposited
Stream discharge - the volume of water passing a point
HG streams have a smaller stream discharge because they have a small cross section
Snow melt causes stream discharge to increase seasonally

IWBAT understand the characteristics of high-gradient and low-gradient streams through shared reading, class discussion, and written responses to questions.

Water Resources Unit

Activity II p. U-81

Think About It

Water collects and cannot go anywhere - from rain, storm surge, snow melt, broken water main building + property damage, trees, animals displaced/killed, some plants killed, land can wash away, sink hole, places uninhabitable

Digging Deeper

meandering streams - low gradient, curves back and forth and gets wider, erode sideways and downward
lower in the stream (closer to the mouth) typically have lower gradients
Valley width increases as discharge increases

IWBAT understand the characteristics of high-gradient and low-gradient streams through shared reading, class discussion, and written responses to questions.

Water Resources Unit

Digging Deeper

The river meander bends keep getting wider
Stream velocity on the outside of the bend is higher
Leading to erosion

Stream vel. on the inside of the bend is lower and
Leads to deposition

the floodplain is built via the deposition inside the
meander bends and from floods

meander scars - ridges in the sediment caused by
deposition during a flood



Oxbow lakes are formed when rivers abandon
a meander bend for another straighter path

IWBAT understand the characteristics of high-gradient and low-gradient streams
through shared reading, class discussion, and written responses to questions.

Water Resources Unit

Digging Deeper

- Water leaves the stream through evaporation
ground water, municipal water system, Crops.

↳ water enters the streams by aquifers,
rainfall, snow melt.

After the precipitation stops the Baseflow
continues to flow from Bedrock + sediment
Plants + groundwater systems help
prevent floodings in the summer

IWBAT understand the characteristics of high-gradient and low-gradient streams
through shared reading, class discussion, and written responses to questions.

Water Resources Unit

Flooding occurs when the stream channel can't hold the extra water.

In Schoology,

Answer Check Your Understanding

- p. U-79 #1-5
- p. U-87 #2

in complete sentences.

IWBAT understand the characteristics of high-gradient and low-gradient streams through shared reading, class discussion, and written responses to questions.

Water Resources Unit

09/05/17

Activity 3 p. U-90

IWBAT understand the effect of stream velocity on sediment loads through shared reading, class discussion, and written responses to questions. I will use vocabulary such as turbulence, sediment, and velocity.

Water Resources Unit

Activity 3 p. U-90

Think About It - Piénsalo

How fast the current runs

Where the stream has traveled

How it will look when water flows (calm, rough)

A stream with a large force can move boulders and break rocks and carve a new path/flood

Changing the bed can change where the fish live

A stream with a small force can still move leaves and sand

Digging Deeper

Chemical dissolution = dissolving (pulled apart chemically)

Most clay consists of minerals (flat)

mineral composition may be different in different places

IWBAT understand the effect of stream velocity on sediment loads through shared reading, class discussion, and written responses to questions. I will use vocabulary such as turbulence, sediment, and velocity.

Water Resources Unit

Digging Deeper

Suspended load - material carried up in the water
clay, silt, sand

bed load - sediment moving along the bottom of the stream (sliding, rolling)

sand, pebbles, cobbles

Sediment particles rest in pockets between other particles

A minimum force is needed to move them - threshold velocity

Higher stream flows have more frequent and harder collisions

IWBAT understand the effect of stream velocity on sediment loads through shared reading, class discussion, and written responses to questions. I will use vocabulary such as turbulence, sediment, and velocity.

Water Resources Unit

Digging Deeper

Sediment particles become rounded as they bounce along
Pieces can be sandblasted by suspended solids
Sandblast - to remove surface material through the
high velocity impacts of small particles (sand, silt)
Softer rocks degrade quicker
Some can be reduced in size by dissolution
Downstream fining - upstream particles are much
coarser than downstream
Stream flow carries the finer particles farther
than the coarser particles

Answer Check Your Understanding

- p. U-98 #2
in a complete sentence.

Water Resources Unit

08/31/17

Activity 4 p. U-100

IWBAT understand the parts of a river system and the effects of river systems on communities through shared reading, class discussion, and written responses to questions. I will use vocabulary such as tributary, drainage basin, and drainage divide.

Water Resources Unit

Activity 4 p. U-100

Think About It - Google a leaf image to describe

Little veins/streams connect to bigger, both carry out
Transport water + materials, both supply things for life
Both grow, come in different sizes

Leaves - plant, river - not, Leaves - stationary, rivers - flow

Leaves - part of another organism

Digging Deeper

A river system is a network of streams

Tributary system - little streams go into bigger
streams that go into bigger streams themselves
and are usually found by mountains

Trunk stream - a major stream fed by large tributaries

IWBAT understand the parts of a river system and the effects of river systems on communities through shared reading, class discussion, and written responses to questions. I will use vocabulary such as tributary, drainage basin, and drainage divide.

Water Resources Unit

Digging Deeper

Distributary system - deposits sediment into
the ocean, small channels branch off near the
final destination (often a delta)

In all river systems the water flows downhill
With exceptions in Alaska and the western US,
the rivers flow into the Atlantic + Pacific Oceans

A drainage basin is an area in which all the
precipitation that falls ends up in the same
final destination

Rivers east of the Appalachian Mts. flow directly
to the Atlantic Ocean with few exceptions

IWBAT understand the parts of a river system and the effects of river systems on communities through shared reading, class discussion, and written responses to questions. I will use vocabulary such as tributary, drainage basin, and drainage divide.

Water Resources Unit

Digging Deeper

The Mississippi River drainage basin collects water from a large section of North America and deposits it in the Gulf of Mexico

Drainage divides separate drainage basins
The rain that falls on a divide may end up in different oceans or may travel by different paths to the same ocean

Humans use river systems for waste disposal and for drinking water

People have worked to stop putting waste in the river systems

IWBAT understand the parts of a river system and the effects of river systems on communities through shared reading, class discussion, and written responses to questions. I will use vocabulary such as tributary, drainage basin, and drainage divide.

Water Resources Unit

Digging Deeper

Transportation of materials + people

Running water is used to generate power

Dams are used to control water flow

Water behind the dam can supply cities and agricultural areas

Dams disrupt the natural flow of rivers and their ecosystems.

Rivers also provide recreation

Rivers change the surface of the earth, even where water is scarce

Answer Check Your Understanding

- p. U-110 #1, 2, 3

in a complete sentence.

IWBAT understand the parts of a river system and the effects of river systems on communities through shared reading, class discussion, and written responses to questions. I will use vocabulary such as tributary, drainage basin, and drainage divide.

Activity 5 p. U-113

IWBAT understand river systems as a part of the earth system through shared reading, class discussion, and written responses to questions. I will use vocabulary such as reservoir, flux, and outflow.

Seré capaz de comprender los sistemas fluviales como parte del sistema terrestre a través de la lectura compartida, la discusión en clase y respuestas escritas a las preguntas. Usaré vocabulario como reservorio, flujo y flujo de salida.

Water Resources Unit

Activity 5 p. U-113

Think About It *Weathering - loose sediment, pieces of rock,
Deposition - pieces of things not local*

Transportation - water velocity, boats, cloudiness

Digging Deeper - U115

*flux - the movement of water from one reservoir
to another - in flows + outflows*

*Water can exist in three physical states - solid,
liquid, and gas*

Streams are always changing

*Streams interact w/ 4 earth systems: Geosphere,
Hydrosphere, Atmosphere, and Biosphere*

IWBAT understand river systems as a part of the earth system through shared reading, class discussion, and written responses to questions. I will use vocabulary such as reservoir, flux, and outflow.

Water Resources Unit

Digging Deeper

A reservoir in a stream system can be compared to a sink. As inflow increases, outflow also increases. Flooding over the sides is another outflow of water. When the inflow is too big for the outflow, the water can spill over the sides and flood.

Reservoirs include groundwater, biosphere, atmosphere, surface water runoff, streams, and lakes

Effects of flooding: undercutting of stream banks, increased transportation of sediment, damage to vegetation

IWBAT understand river systems as a part of the earth system through shared reading, class discussion, and written responses to questions. I will use vocabulary such as reservoir, flux, and outflow.

Water Resources Unit

Digging Deeper

During summer months Vegetation absorbs more water

Warmer temperatures result in more evaporation and lower ground water levels, lower flow amounts, and less sediment transportation

Urbanization - the process of converting natural lands for human use which affect stream processes

Paving causes stream flow to increase because the precipitation cannot be absorbed into the groundwater

Sewage and pesticides can kill fish + vegetation

Irrigation reduces stream flow

Water Resources Unit

Digging Deeper

Scientists, Engineers, and City Planners answer questions about how streams affect the process of development and how development affects streams
Natural processes, hazards, and regulations may prevent construction

Water Resources Unit

Answer Check Your Understanding

- p. U-117 #1, 3, 4
in a complete sentence.

What you should have completed as of today:
Lo que deberías haber completado a partir de hoy:

Respuesta Compruebe su comprensión

Answer Check Your Understanding

- p. U-79 #1-5
 - p. U-87 #2
 - p. U-98 #2
 - p. U-110 #1, 2, 3
 - p. U-117 #1, 3, 4
- in complete sentences.
oraciones completas.

Turn these in for a grade (on paper or online).
Convierta estos para un grado (en papel o en línea).

Water Resources Unit

Unit 4: Chapter 3 (p. R-144)

Chapter Challenge

Answer the questions
Graphs / Charts / Tables / Pictures
Position - for or against
Quality of Writing (Citations)
XC-Rebuttal
Turn in project

→ Evidence
→ Justify

IWBAT understand what is required of us during the preparation for and execution of the chapter challenge performance task. I will do this through shared reading and class discussion. I will use vocabulary such as residential, development, and supply.

Water Resources Unit

Unit 4: Chapter 3: Activity 1
(p. R-146)

I will generate a graphical model of the transport of water between reservoirs within the water cycle. I will use vocabulary such as precipitation, transpiration, and evaporation.

Generaré un modelo gráfico del transporte de agua entre embalses dentro del ciclo del agua. Usaré vocabulario como precipitación, transpiración y evaporación.

Water Resources Unit

Unit 4: Chapter 3: Activity 1 (p. R-146)

The activity is located in your Schoology for this class:

Earth Science S1: 03622-1, 03622-2 ▶ Unit 1 Water Resources / Unidad 1 los Recursos Hídricos ▶ Week 3 / Semana 3
 **Ch 3 Activity 1 The Water Cycle/ Capítulo 3 Actividad 1 El Ciclo del Agua**

La actividad está ubicada en su Schoology para esta clase:

Earth Science S1: 03622-1, 03622-2 ▶ Unit 1 Water Resources / Unidad 1 los Recursos Hídricos ▶ Week 3 / Semana 3
 **Ch 3 Activity 1 The Water Cycle/ Capítulo 3 Actividad 1 El Ciclo del Agua**

Skip Part B.
Omitir parte B.

I will generate a graphical model of the transport of water between reservoirs within the water cycle. I will use vocabulary such as precipitation, transpiration, and evaporation.

Water Resources Unit

Unit 4: Chapter 3: Activity 1 Digging Deeper

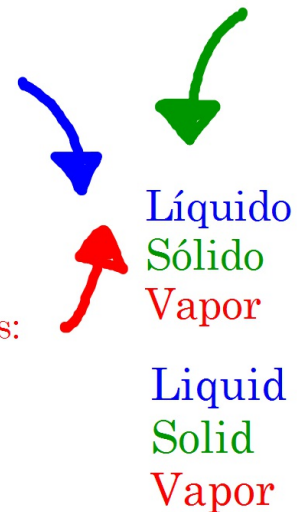
Respuesta en oraciones completas:

Answer in complete sentences:

Compruebe su comprensión

Check Your Understanding

- p. R-154 #1, 3



I will generate a graphical model of the transport of water between reservoirs within the water cycle. I will use vocabulary such as precipitation, transpiration, and evaporation.

Unit 4: Chapter 3: Activity 2
(p. R-156)

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Seré capaz de discutir las fuentes de agua doméstica a través de la lectura compartida, discusión en clase y respuestas escritas a las preguntas. Utilizaré vocabulario como acuífero, acueducto y permeabilidad.

Unit 4: Chapter 3: Activity 2

Think About It (p. R-156)

Regulate the use, Conserve/don't waste, use multiple sources, share water at properties with neighbors
groundwater - some surface water has soaked into the ground, it doesn't evaporate

Investigate - Part C (R-161)

1a) Lakes, Rivers, reservoirs fed by snowmelt + rain
Western slope water is transported to eastern slope rivers via aqueducts (tunnels). This water is then taken into water treatment plants.

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Investigate - Part C (R-161)

1b)

Highly Reliable water system, which was planned decades ago. Denver water has embarked on a new resource plan, in a response of climate change including groundwater

1c) Reservoir system which includes 20,000 acre-feet of water in reserve for draughts or other water emergencies

1d)

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Investigate - Part C (R-161)

1e)

1f)

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Digging Deeper - p. R162

People took water from rivers + dug own wells since colonial times

Main water sources: Surface water, groundwater

Cities need safe water so it must be collected, stored, and treated

Increase supplies

- Withdrawing groundwater from aquifers
- Withdrawing water from rivers + lakes
- Build dams + reservoirs to store runoff
- Improve efficiency of water use via conservation
- Transport water from afar via aqueducts
- Desalinate sea water into fresh water

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Digging Deeper

Most rivers vary from season to season so are not very reliable sources of water

We withdraw water from lakes and reservoirs which fluctuate less with the seasons or years

Dams control flooding, store water for use,

BUT disrupt natural fish migrations, collect sediment behind the dam (filling up), displaced wildlife + people, cover crop land

Porosity - the measure of the % of open spaces (pores) in a material

Permeability - the measure of how easily water flows through porous material

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Digging Deeper

aquifer - any body of rock of adequate size that has sufficient porosity and permeability to supply wells
Sediment + rock in the unsaturated zone are mostly filled with air except when water percolates downward
The water eventually reaches a zone where the pores are filled with water, the saturated zone
The top of this zone is the water table
Groundwater speeds of 1 m/day are high; speeds of 1 m/yr are common.
Groundwater moves from where it is relatively high to relatively low

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Digging Deeper

In rural areas and small towns, many houses have their own wells to access groundwater.
Unconfined aquifers have a free connection to the surface.
Addition of new water to an aquifer is called recharge.
Some aquifers are isolated from the surface by an impermeable layer called an aquiclude (often fine clay) and are recharged tens or hundreds of kilometers away.
Where groundwater has been for a long time, the ground subsides (lowers) when the water is removed.
Aqueducts - system of large surface channels & pipes to transport water over long distances

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Digging Deeper

Desalination - converting sea water to fresh water by removing the salt

Conservation - use less
Water may be available for new development

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 2

Respuesta en oraciones completas:

Answer in complete sentences:

Compruebe su comprensión

Check Your Understanding

○ p. R-166 #1-4

Comprender y aplicar lo que ha aprendido

Understanding & Applying What You Have Learned

○ pp. R-167-8 #1, 2, & 5

IWBAT discuss the sources of domestic water through shared reading, class discussion, and written responses to questions. I will use vocabulary such as aquifer, aqueduct, and permeability.

Water Resources Unit

Unit 4: Chapter 3: Activity 3

p. R-169

IWBAT explain the difference between consumptive and nonconsumptive use. I will do this through shared reading, class discussion, and written responses to questions. I will use vocabulary such as conservation and domestic.

Seré capaz de explicar la diferencia entre el uso consuntivo y no consumo. Lo haré a través de la lectura compartida, discusión en clase y respuestas escritas a las preguntas. Voy a utilizar el vocabulario, como la conservación y doméstica.

Water Resources Unit

Unit 4: Chapter 3: Activity 3

Think About It p. R-169

5gal, 2gal, 1gal, 1C, 2C
use the flow rate of the faucet + the time taken
use a measuring cup or beaker
Premeasure the water

Investigate - Part B **Denver only / solo Denver**

Skip 5a and answer 5b and 5c for Denver only. Be prepared to share out. / Omitir 5a y la respuesta 5b y 5c para Denver solamente. Está preparado para compartir.

Denver ~403 gal/person/day
National ~2000 gal/person/day

IWBAT explain the difference between consumptive and nonconsumptive use. I will do this through shared reading, class discussion, and written responses to questions. I will use vocabulary such as conservation and domestic.

Water Resources Unit

Unit 4: Chapter 3: Activity 3

Digging Deeper

~134 billion gallons of water were used to irrigate crops each day in 1995
Domestic use is about 7.7% of the total
Irrigation + thermoelectric use 78% of fresh water use
Consumptive use - water that is returned to the atmosphere as water vapor
Non-Consumptive - water that returns to the system in liquid form

IWBAT explain the difference between consumptive and nonconsumptive use. I will do this through shared reading, class discussion, and written responses to questions. I will use vocabulary such as conservation and domestic.

Water Resources Unit

Unit 4: Chapter 3: Activity 3

Digging Deeper

Common ways of increasing water supplies are constructing dams and reservoirs, development of groundwater, and pipelines and aqueducts to bring water from afar
Farmers can conserve water using drip irrigation due to lack of evaporation + water is delivered in smaller doses at the plant roots
Xeriscaping - planting specifically to use less water on plant irrigation
People can conserve water through low-flow appliances + on demand water

IWBAT explain the difference between consumptive and nonconsumptive use. I will do this through shared reading, class discussion, and written responses to questions. I will use vocabulary such as conservation and domestic.

Water Resources Unit

Unit 4: Chapter 3: Activity 3

Respuesta en oraciones completas:
Answer in complete sentences:

Compruebe su comprensión

Check Your Understanding

○ p. R-175 #1-3

Comprender y aplicar lo que ha aprendido

Understanding & Applying What You Have
Learned

○ pp. R-176 #1 & 3

IWBAT explain the difference between consumptive and nonconsumptive use. I will do this through shared reading, class discussion, and written responses to questions. I will use vocabulary such as conservation and domestic.

Water Resources Unit

Unit 4: Chapter 3: Activity 4

p. R-177

IWBAT explain the influence of local climate on the water budget and identify the times of year when the supply and demand of water are highest and lowest. I will do this via group discussion and constructing a graphical model using vocabulary such as budget, supply, and demand.

Seré capaz de explicar la influencia del clima local en el presupuesto de agua e identificar las épocas del año en que la oferta y la demanda de agua son más altas y más bajas. modelo utilizando vocabulario como presupuesto, oferta y demanda.

Water Resources Unit

Unit 4: Chapter 3: Activity 4

Think About It

p. R-177

Seem to have less \$ around the holidays
More \$ in the summer, more work + more business
You know how much you can spend and have \$ for
emergencies + events
You can make your \$ last until the end of the
month by buying store brands + sale items

Investigate

30 min

Done in partners/small groups

Hecho en socios / grupos pequeños

Part A: Online research & graph creation

Parte A: Investigación en línea y creación de gráficos

IWBAT construct a water budget of my community from data, explain the influence of local climate on the water budget, and identify the times of year when the supply and demand of water are highest and lowest.

Water Resources Unit

Unit 4: Chapter 3: Activity 4

Digging Deeper - R180

A water budget accounts for the sources of water and its various uses.

Most rainfall varies throughout the year; river beds may be dry except during rain, but some places have water in their rivers all year.

Another major water supply that is not as vulnerable to fluctuations as surface water is groundwater.

The volume of water that flows past a point in the river is called its discharge.

Most cities + towns that use rivers for a water supply only take a small portion of the river discharge.

IWBAT construct a water budget of my community from data, explain the influence of local climate on the water budget, and identify the times of year when the supply and demand of water are highest and lowest.

Water Resources Unit

Unit 4: Chapter 3: Activity 4

Digging Deeper R181 #2

During times of drought, groundwater can account for more than 40% of a river's flow; during floods it's much less.

At high flow, the river water feeds the groundwater

At low flow times, groundwater feeds the river

During dry spells, groundwater flows toward lakes, streams, and the ocean (if near the coast) and there is insufficient precipitation to recharge the aquifer - water table drops

IWBAT construct a water budget of my community from data, explain the influence of local climate on the water budget, and identify the times of year when the supply and demand of water are highest and lowest.

Water Resources Unit

Unit 4: Chapter 3: Activity 4

Digging Deeper

As water is pumped from a well, the water table forms a cone of depression in the vicinity of the well

The amount of water entering the system equals the amount leaving the system and the water table stays the same on average. Wells upset this balance.

When enough water comes in from surrounding areas to replenish the water removed, groundwater is a renewable resource.

IWBAT construct a water budget of my community from data, explain the influence of local climate on the water budget, and identify the times of year when the supply and demand of water are highest and lowest.

Water Resources Unit

Unit 4: Chapter 3: Activity 4

If the water is removed faster than it can be replenished, it is a non-renewable resource; it is effectively being mined

Respuesta en oraciones completas:

Answer in complete sentences:

Compruebe su comprensión

Check Your Understanding

○ p. R-182 #1-3

Comprender y aplicar lo que ha aprendido

Understanding & Applying What You Have

Learned

○ p. R-183 #1 & 3

IWBAT construct a water budget of my community from data, explain the influence of local climate on the water budget, and identify the times of year when the supply and demand of water are highest and lowest.

Water Resources Unit

Unit 4: Chapter 3: Activity 5

IWBAT identify and describe ways that human activity affects surface water and ground water. I will do this through group discussion, watching relevant videos, filling out a concept map, and write a short essay using vocabulary such as pollution, resources, and predict.

Seré capaz de identificar y describir las formas en que la actividad humana afecta a las aguas superficiales y subterráneas. Haré esto a través de la discusión en grupo, viendo videos relevantes, rellenando un mapa conceptual y escribiendo un ensayo corto usando vocabulario como contaminación, recursos y predicción.

Water Resources Unit

Unit 4: Chapter 3: Activity 5

Think About It - p. R184

dumping, animal waste, air pollutants, dead animals, corpses, leaks, human waste, accident
leak, corpses, leeching, accident, buried waste, fertilizers mixed into the soil, corrosion, dissolution

Investigate - See your Schoology class

Water Resources Unit

Week 6

Activity 5 folder

Activity 5: Water Pollution

Investigar - Ver tu clase de Estudios

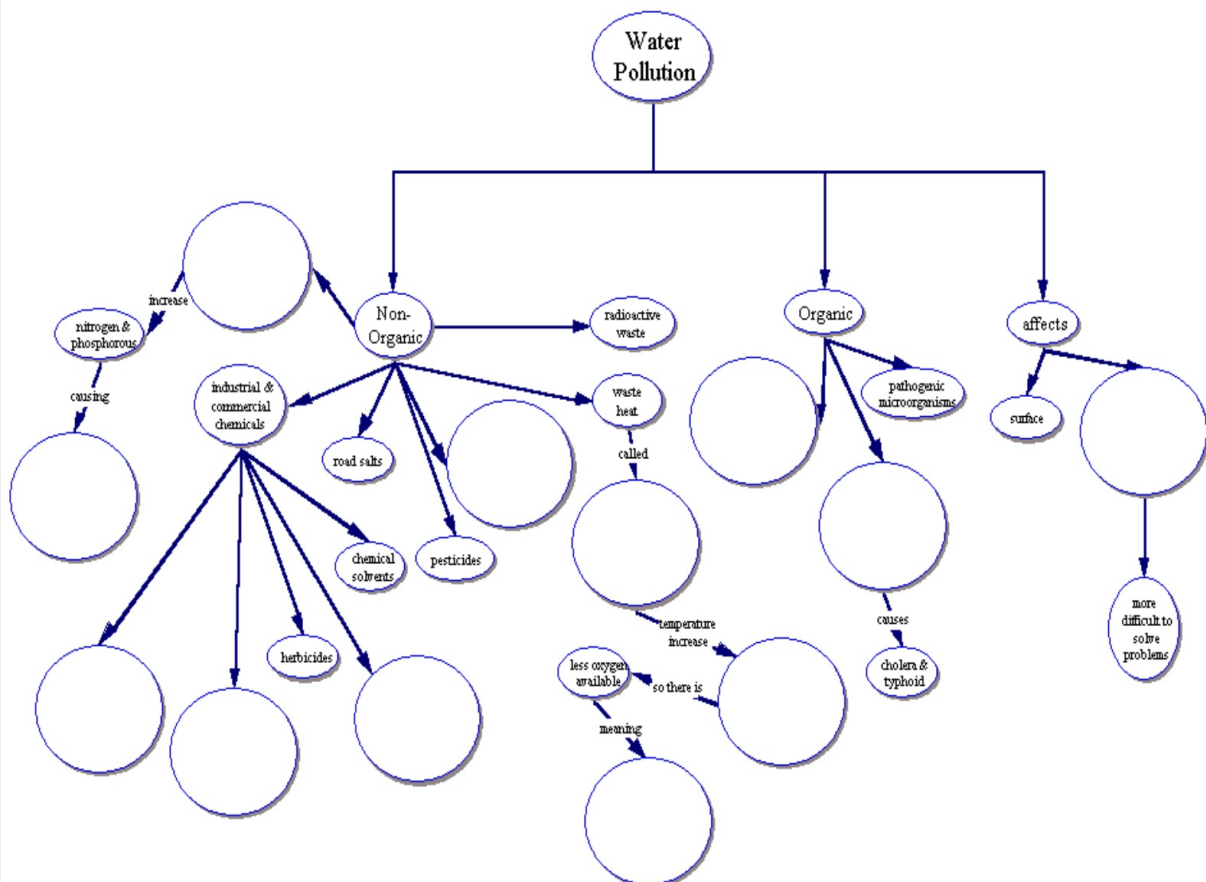
Unidad de Recursos Hídricos

Semana 6

Actividad 5 carpeta

Actividad 5: Contaminación del agua

IWBAT identify and describe ways that human activity affects surface water and ground water. I will do this through group discussion, watching relevant videos, filling out a concept map, and write a short essay using vocabulary such as pollution, resources, and predict.



Water Resources Unit

Unit 4: Chapter 3: Activity 5

Digging Deeper / Profundizando en el tema - R189

Ground water may contain fewer types of pollutants, but there is a larger amount of pollutant than in surface water, and it's harder to clean because ground water moves much more slowly than surface water.

Sewage can cause illnesses because of the bacteria contained in feces. Coliform bacteria are generally not harmful, but signal contamination. (e.coli)

Nitrogen (N), Phosphorus (P), Nitrate (-NO_3)

Excess Nitrogen can cause algae growth which robs water of O_2 needed by aquatic animals (anoxia). Excess N in the blood reduces the amount of O_2 carried by red blood cells which leads to suffocation "blue baby syndrome" (hypoxia)

IWBAT identify and describe ways that human activity affects surface water and ground water. I will do this through group discussion, watching relevant videos, filling out a concept map, and write a short essay using vocabulary such as pollution, resources, and predict.

Water Resources Unit

Unit 4: Chapter 3: Activity 5

Digging Deeper / Profundizando en el tema - R189

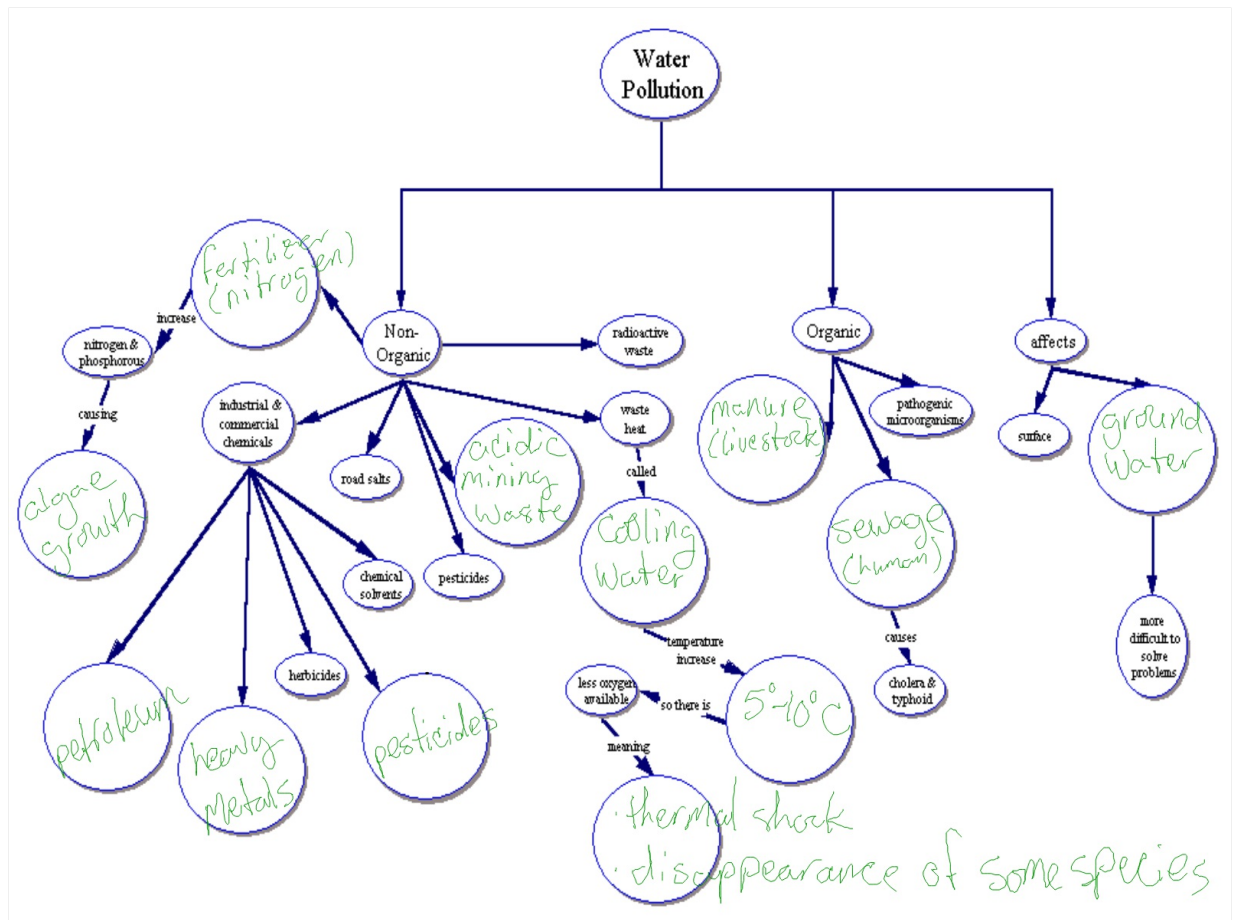
Excess phosphorus can cause algae blooms

Chemical solvents, gasoline, pesticides, herbicides, heavy metals: Copper, lead, Zinc, Cadmium, Mercury

A large percentage of new chemicals are possibly or definitely toxic and many end up in surface water and groundwater supplies. Some are dumped and some leak from containers.

Cooling water - less oxygen in the warmer water, $5-10^\circ\text{C}$, species can die from thermal shock or suffocation
New species can move in

IWBAT identify and describe ways that human activity affects surface water and ground water. I will do this through group discussion, watching relevant videos, filling out a concept map, and write a short essay using vocabulary such as pollution, resources, and predict.



Water Resources Unit

Unit 4: Chapter 3: Activity 5

Compose an essay explaining why water resources are important in Colorado. Summarize the water use in Colorado and predict what could happen in the future if we are not careful with our resources. Be prepared to share your answer with the class.

Redacte un ensayo explicando por qué los recursos hídricos son importantes en Colorado. Resumir el uso del agua en Colorado y predecir lo que podría suceder en el futuro si no tenemos cuidado con nuestros recursos. Esté preparado para compartir su respuesta con la clase.

IWBAT identify and describe ways that human activity affects surface water and ground water. I will do this through group discussion, watching relevant videos, filling out a concept map, and write a short essay using vocabulary such as pollution, resources, and predict.

Water Resources Unit

Unit 4: Chapter 3: Activity 6

I will research and describe the water treatment process used by my community and understand the stages of the filtration of water for public use. I will do this via online research, shared reading, and responding to questions using vocabulary such as purification, treatment, and pollution.

Voy a investigar y describir el proceso de tratamiento de agua utilizado por mi comunidad y comprender las etapas de la filtración de agua para uso público. Voy a hacer esto a través de la investigación en línea, la lectura compartida, y responder a las preguntas utilizando vocabulario como la purificación, el tratamiento y la contaminación.

Water Resources Unit

Unit 4: Chapter 3: Activity 6

Think About It / Piensalo - p. R196

Cleanliness of water, illness, death, fish or insects in water,
Dead animals, trash, feces, insects, viruses, blood contaminants,
bacteria, chemicals
Carry water, boil the water, Collect rain water, Life Straw
(filter)

Investigate Part C - p. R198

The materials you need are in the Activity 6 folder inside the Week 7 folder.

Investigar Parte C - p. R198

Los materiales que necesita se encuentran en la carpeta Actividad 6 dentro de la carpeta Semana 7.

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Water Resources Unit

Unit 4: Chapter 3: Activity 6

Digging Deeper / Profundizando en el tema - R199

Water purification occurs in nature. Evaporation + Condensation separates the water from substances dissolved in it. Bacteria convert organic contaminants into simple + harmless compounds. Sand + gravel filter out suspended materials that make water cloudy. Rainwater + groundwater cleaned this way can supply clean drinking water.

Municipal wastewater treatment includes screening, flocculation, filtering, + disinfecting.

Wastewater that passes through a septic system is not treated again.

In sedimentation tanks, sewage flows slowly so gritty materials settle to the bottom and sludge floats to the top.

Alum + steel lime may be added to improve clumping + settling of sludge.

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Digging Deeper / Profundizando en el tema - R199

Filters help remove minute particles + odors (activated carbon - crushed charcoal)

Ion exchange can be used to remove inorganic compounds that are not removed by sand, etc. Ion exchange can remove contaminants such as arsenic, radium, + nitrates.

Water is aerated to speed up the natural oxidation and decomposition of organic matter

Chlorine is a very effective disinfectant - protects distr. system

Ozone is an effective disinfectant, but it does not protect against contaminants in the distribution system

Sometimes the process creates byproducts when chlorine reacts with organic matter in treated drinking water

Long term exposure can lead to illness + cancer risk

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Water Resources Unit

Unit 4: Chapter 3: Activity 6

Digging Deeper / Profundizando en el tema - R199

Primary - filtering + treatment w/ chlorine
Secondary - filtering, oxidation by microorganisms
Tertiary - flocculation, disinfecting, remove excess Fe + Mn
Water costs slightly more than \$2 / 1000 gal
Water hardness - reflects the concentrations of dissolved solids (mainly Ca + Mg - nutrients)
protects against lead being dissolved out of solder
Disadvantage - reduces soapsuds, leaves hard white deposits
Water softeners replace Ca + Mg with Na - bad for people with high blood pressure

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Water Resources Unit

Unit 4: Chapter 3: Activity 6

Digging Deeper / Profundizando en el tema - R199

Respuesta en oraciones completas:

Answer in complete sentences:

Compruebe su comprensión

Check Your Understanding

○ p. R-201 #1 & 3

Comprender y aplicar lo que ha aprendido

Understanding & Applying What You Have Learned

○ p. R-202 #1 & 3

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Water Resources Unit

Due Monday, 10/23 noon

Debido lunes, 23/10 al mediodia

Day 1 Pro & Day 2 Con

IWBAT construct a three paragraph argumentative essay. I will do this through researching online the arguments for and against using dams on rivers, take relevant notes, and collaboratively document my sources. I will adhere to correct grammar and usage, transitions, citations, and use vocabulary such as dam, river, reservoir, and environment.

Directions in Schoology / Direcciones en Schoology

Dia 1 Favorable & Day 2 en Contra

Seré capaz de construye un ensayo argumentativo de tres párrafos. Haré esto a través de la investigación en línea de los argumentos a favor y en contra de usar represas en los ríos, tomar notas relevantes y documentar en colaboración mis fuentes. Me adheriré a la gramática correcta y al uso, transiciones, citas y uso del vocabulario como presa, río, embalse y ambiente.

Water Resources Unit

Due Monday, 10/23 noon

Debido lunes, 23/10 al mediodia

Day 3 Construct My Essay

IWBAT construct a three paragraph argumentative essay. I will do this through researching online the arguments for and against using dams on rivers, take relevant notes, and collaboratively document my sources. I will adhere to correct grammar and usage, transitions, citations, and use vocabulary such as dam, river, reservoir, and environment.

Directions in Schoology / Direcciones en Schoology

Dia 3 Construye Mi Ensayo

Seré capaz de construye un ensayo argumentativo de tres párrafos. Haré esto a través de la investigación en línea de los argumentos a favor y en contra de usar represas en los ríos, tomar notas relevantes y documentar en colaboración mis fuentes. Me adheriré a la gramática correcta y al uso, transiciones, citas y uso del vocabulario como presa, río, embalse y ambiente.